

L 41013-66 EWT(m)/T/EMP(t)/ETI LJP(c) JD
 ACC NR: AP6021709 (N) SOURCE CODE: UR/0148/66/000/003/0153/0156

AUTHOR: Sumarokov, N. V.; Makarova, L. Ye.

ORG: Perm' Polytechnic Institute (Permskiy politekhnicheskiy institut)

TITLE: Phase composition, structure and mechanism of formation of the cyanided layer on stainless chromium steels

SOURCE: IVUZ. Chernaya metallurgiya, no. 3, 1966, 153-156

TOPIC TAGS: stainless chromium steel, cyanidation, phase composition, carbide, nitride /
 / Kh17N2 stainless chromium steel, 1Kh13 stainless chromium steel

ABSTRACT: This is a continuation of previous investigations (N. V. Sumarokov, Ye. N. Busalayeva. Sb. otraslevykh laboratoriy Permskogo SNKh (Mashinostroyeniye), 1961; and three other investigations) with the difference that it presents additional findings obtained by metallographic, radiographic and chemical examination of the cyanided layer on Kh17N2 and 1Kh13 stainless chromium steels. Thus, it is established that the cyanided layer contains a large number of excess carbides which segregate during nitrogen case-hardening; the outermost part of the layer includes a readily etchable "dark zone" which is free of excess carbides,

Card 1/2

UDC: 669.26:621.785.666:620.181:620.183

MAFACOM, M. Ia.

Investigation of the Σ class of domains. Usp. mat. nau.
10 no. 5:113-119 S- '61. (1961 14:11)
(Aggregates)

MAKAROVA, L. Ya.

Runge domains of the first and second type. Trudy TGU
144:56-60 '59. (MIRA 13:6)

1. Kafedra obshchey matematiki Tomskogo gosudarstvennogo
universiteta im. V.V. Kuybysheva.
(Functions of complex variables)

16(1)

AUTHOR: Makarova, L.Ya.

SOV/42-14-4-14/27

TITLE: On Domains Convex With Respect to the Polynomial Class

PERIODICAL: Uspekhi matematicheskikh nauk, 1959, Vol 14, Nr 4, pp 173-178(USSR)

ABSTRACT: Let Σ_1 be the set of domains of regularity bounded by analytic hypersurfaces $P(w, z) = c(t)$, where $P(w, z)$ is a polynomial in w and z , and $p=c(t)$ is a Jordan curve.

Theorem: Let $D \in \Sigma_1$; $T_k : P_k(w, z) = c_k(t_k)$, $k=0, 1, 2, \dots, n$, be the surfaces which bound D . If 1) the hypersurfaces T_1, T_2, \dots, T_n bound a domain $D_1 \supset D$ convex with respect to the polynomial class; 2) $l_0 : P_0 = c_0(t_0)$ is an infinite Jordan curve, then D is convex with respect to the polynomial class.

Further four theorems on similar questions are formulated. Three of the theorems are already published [Ref 3].

The proof of the theorems base on the method of the semicontinuous continuation.

There are 7 references, 3 of which are Soviet, and 4 German.

SUBMITTED: November 6, 1957

Card 1/1

MAKAROVA, L. Ya., Cand of Phys-Math- Sci -- (diss)

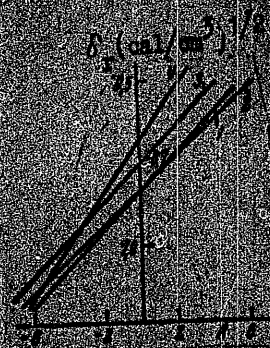
"Convex Areas With Regard to the Class of Polynomials," Tomsk, 1959, 5 pp (Ministry of Higher and Secondary Special Education, USSR. Tomsk State University im Kuybyshev)
(KL, 7-60, 106)

MAKAROVA, L.V.; ZAKHAROV, N.D.; AGAFONOVA, K.I.

Effect of the molecular weight of epoxy resins on the vulcanization
of chloroprene rubber. Kauch. i rez. 24 no.5:6-10 My '65.
(MIRA 18:9)

1. Yaroslavskiy tekhnologicheskii institut.

ENCLOSURE 01



Dependence of the solubility parameter (δ) on the magnitude of the interaction parameter (χ). 1 - SRMP - SBR (copolymer of methyl methacrylate and styrene); 2 - SRMA - SBR (copolymer of methyl methacrylate and styrene); 3 - SRMA - SBR (copolymer of methyl methacrylate and styrene); 4 - SRMA - SBR (copolymer of methyl methacrylate and styrene). Where χ is a constant characterizing the interaction between the rubber and dissolving solvent, $\chi_s = 0.25$ for all rubbers and χ molar volume of the solvent.

1. SUBJECT: 450 0509

2. DESCRIPTION: 1. Vostochny Tekhnologicheskyy Institut (Far Eastern Technological Institute) (Vostochny Tekhnologicheskyy Institut) (Scientific and Technical Institute of the Far East Industry)

3. LOCATION: 230000

4. DATE: 0000

5. FROM: 01

6. OTHER: 002

SUB CODE: MT

1. TITLE: Determination of the cohesion energy density of some synthetic rubbers with functional groups.
 2. AUTHOR: Shadrin, V. I. Shvarts, A. G. Zakharov, V. D. Priborets, A. M.
 3. JOURNAL: Vysokomolekulyarnye soyedineniya, v. 7, no. 6, 1965, 1056-1059
 4. SUBJECT: synthetic rubber, cohesion energy, tensile strength, tensile stress, polymer, acrylonitrile
 5. SUMMARY: The investigation was undertaken to characterize the intermolecular interaction in a series of synthetic rubbers containing functional groups in terms of their cohesion energy density. The compounds studied were chlorosulfonopolybutadiene and the copolymers of acrylonitrile with divinyl. Vulcanization was carried out at 140°C for 30 minutes. The cohesion energy density was derived from the measured change in the equilibrium modulus of elasticity resulting from the removal of chlorine and divinyl substituents on the specimen, as suggested by V. I. Shvarts (Zh. Fiz. Khim., 32, 118, 1958). The experimental results are presented in Fig. 1 in the enclosure. Orig. art. has 4 tables and 1 graph.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031500032-6

EXHIBIT NO. 12 013/52

EXHIBIT NO. 00

NO. 122 5071-001

EXCERPT 02

OTHER: 000

SEE CODE: MT, NP

1971-1972

CONCLUSION: The

It was noted that the plasticity of the neoprene A (without the vulcanizate) did not change up to 100°C, but decreased suddenly with higher temperatures. The metal cross-linking of this process. Epoxy resins increased the initial plasticity of the neoprene A and also produced the maximum effect. They also accelerated the development of the cross-linked structure, the intensive formation of which began at 150-160°C. Plasticity variation is shown graphically in Fig. 1 of the manuscript, and the kinetics of the cross-structure formation in Fig. 2. The cross-linking acceleration in the epoxy rubbers was lower than in the metallo-organic ones, and higher than in the thermovulcanizate types. Their modulus at 100°C elongation increased with the increase in molecular weight, while the strength at elongation were decreased. These characteristics are explained by the strengthening of intermolecular bonds in rubber under the action of epoxy resins. The comparison of neoprene rubber properties with those of standard rubbers revealed a higher resistance to fatigue, lower heat production, and stronger resistance to break-covered repairs. The best results were obtained with E-40 and E-60 resins. (See, for example, Table 1 and 2 figures).

CONCLUSION: The epoxy technology is a promising (Targeted) Technical

Age Group	Total (%)	Female (%)	Male (%)	Unknown (%)
18-24	100	85	15	0
25-34	100	75	25	0
35-44	100	85	15	0
45-54	100	75	25	0
55-64	100	85	15	0
65+	100	75	25	0

001/0028/0005/0006/0010
678,63, 1075,043,678,63

И. В. Зайцев, Т. В. Афанасова, К. Т.

the molecular weights of epoxy resins in the polymerization of

[illegible]

Rubber, vulcanized; rubber, unvulcanized; rubber, neoprene; epoxy resin; rubber processing; rubber technology; rubber compounds; rubber machinery; rubber testing; neoprene rubber.

viscosity, the effect of molecular weight of resins (E-40, E-42, E-44, and E-46) on the viscosity of the solution at room temperature was investigated in mixtures with diam hardener not containing additional stearic acid. The samples were dried in the laboratory and vulcanized in hydraulic press at 140°C. Their specific surface density was determined according to the method described by A. G. Kovalev (Zhurnal i Vestnik, No. 7, 31, 1954) and their swelling tendency according to the plasticity variation after vulcanization in the press at various temperatures and at 20 atm pressure for 30 min.

ZAKHAROV, N.D.; FRIMMALL, ROBERT; KISELEVA, N.I.; KRYLOVA, N.O.; MAKAROVA, L.V.

Nonsulfur vulcanization of some synthetic rubbers. Part 4:
Effect of the nitrile group content on the thermal vulcanization
of butadiene nitrile rubbers. Vysokom.soed. 5 no.8:1190-1195
Ag '63. (MIRA 16:9)

1. Yaroslavskiy tekhnologicheskii institut.
(Rubber, Synthetic) (Vulcanization)
(Nitrile rubbers)

RASULI, Z.M., dotsent; ABRAMOVA, A.Kh., kand. med. nauk; MAKAROVA, L.V.

Two cases of spontaneous uterine perforation in premature labor
caused by true placenta accreta. Akush. i gin. 40 no.4:137-138
Jl-Ag '64. (MIRA 18:4)

1. Kafedra akusherstva i ginekologii (zav. - dotsent I.Z.Zakirov)
i kafedra fakul'tetskoy khirurgii (zav. - prof. F.M.Golub) Samarkand-
skogo instituta imeni Pavlova.

FILINKOVSKAYA, Ye.F.; MAKAROVA, L.V.

Use of the finishing preparation "Ksilital' C-15." Khim.volokn.
no.1:52-53 '61. (MIRA 14:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo
volokna (for Filinkovskaya). 2. Mytishchinskiy zavod (for Makarova).
(nyon)

S/138/60/000/006/002/000
A051/A029

The Effect of Certain Organic Compounds on the Vulcanization Process of
Nairite

to this fact, mixtures containing triethanolamine have a characteristic
elevated resistance to scorching. There are 3 tables, 8 figures and 6
references: 3 Soviet, 2 English and 1 German.

ASSOCIATION: Yaroslavskiy tekhnologicheskii institut (Yaroslavl' Technology
Institute).

Card 3/3

S/138/60/000/006/002/008
AO51/A029

The Effect of Certain Organic Compounds on the Vulcanization Process of Nairite

in the following sequence: n-phenylenediamine>thioureaformaldehyde resin>ethylenediamine>resorcin>monoethanolamine>pyrogallol>n-anisoyldi-phenylthiourea. Figure 2 shows the effect of adding the organic substances on the kinetic vulcanization of the mixtures. It is pointed out that the introduction of a number of the investigated substances significantly decreases the vulcanization level. Some of the effective accelerators of vulcanization (monoethanolamine, triethanolamine, and ethylenediamine) decrease the tendency of the mixtures to scorching to a certain extent. It was found that monoethanolamine, ethylenediamine, and pyrogallol are of the greatest interest in accelerating the vulcanization process and in their effect on the physico-mechanical properties. Figure 5 shows the change in the tear resistance of the non-filled mixtures depending on the amount of accelerator added. The best mechanical properties of the vulcanizates were obtained by adding ethylenediamine and triethanolamine (1 weight part). In the case of carbon black-containing mixtures, the best results are achieved in the presence of ethylenediamine triethanolamine. In addition

S/138/60/000/006/002/000
A051/A029

AUTHORS: Zakharov, N.D., Makarova, L.V.

TITLE: The Effect of Certain Organic Compounds on the Vulcanization
Process of Nairite ¹⁵

PERIODICAL: Kauchuk i Rezina, 1960, No. 6, pp. 23 - 26.

TEXT: The effect of a group of organic compounds, such as substances of the diamine, phenol groups, etc., on the vulcanization of nairite mixtures was investigated, since the main disadvantage of nairite lies in its tendency to scorching and in some cases to slow vulcanization. The experimental procedure is outlined. The investigations were carried out on non-filled mixtures of the following composition: (in weight parts) nairite 100.0, magnesium oxide 7.0, zinc oxide 5.0. The other experimental data are listed. Figure 1 shows the effect of adding various organic compounds on the value of the equilibrium modulus of the vulcanizates. All the investigated compounds, with the exception of diazoaminobenzene, were found to accelerate the vulcanization process of nairite, i.e., they increase the number of cross bonds. The investigated substances can be arranged

Card 1/3

Thermal Stability of Some Protective
Organosilicon Enamels

S/191/60/000/001/007/015
B016/B054

No. 315 and Г-4 (G-4). Modification with these resins was carried out by joint condensation of a mixture of the products of joint hydrolysis with polyesters at increased temperature. The heat resistance was tested on pure varnishes and varnishes with pigment admixture (titanium dioxide, chromium oxide, chromium titanate, cadmium red, and aluminum powder) on a steel surface; the protective action and the physicomechanical properties were estimated, which render their practical application possible. The results obtained with resins No. 315 and G-4, as well as with epoxy resin Э-40 (E-40), showed a low heat resistance of the corresponding varnishes at 300°C. Varnishes No. 1 and 2 were much more resistant with an admixture of cadmium red, titanium dioxide, and chromium oxide than without a pigment, both in the pure state and modified by BMK-5 or NI-150. The resulting enamels endure a temperature of 300°C for more than 300 h. After 300 h of heating at 300°C, the average weight loss of the coat is 5-7% in varnishes No. 1 and 2 in the pure state, and 15-22% in varnishes modified with BMK-5 and NI-150. Varnish No. 2 with aluminum powder as a coat endures a temperature of 400°C for more than 100 h, and shows a weight loss of 20.4%. There are 2 tables and 9 references: 4 Soviet, 2 French, and 2 US.

Card 2/2

S/191/60/000/001/007/015
B016/B054

AUTHORS: Moiseyev, A. F., Maklashina, T. S., Makarova, L. V.,
Zhinkin, D. Ya., Konstantinova, N. G.

TITLE: Thermal Stability of Some Protective Organosilicon Enamels

PERIODICAL: Plasticheskiye massy, 1960, No. 1, pp. 36-38

TEXT: The authors report on their studies of the heat resistance of protective organosilicon enamels which were in operation at 300 and 400°C for a prolonged period. Two types of polymethyl phenyl siloxane resins were used as binding agents for these enamels; the resins were used in the pure state and modified by organic polymers. The R/Si ratio was 1.7, in resin I, and 1.5 in resin II. Toluene solutions of resin I are named No. 1, of resin II, No. 2. To modify the binding agent, the authors used the following substances: 1) Polyacrylate of the type БМК-5 (BMK-5) which was added both by the mixing of solutions and on heating. It was previously dissolved in solvent No. 648 (ГОСТ 4006-48, GOST 4006-48). 2) High-viscous ethyl cellulose HM-150 (NI-150) was added in solution. 3) Polyester resins

Card 1/2

MAKAROVA, I.S.

Poultry section of a state grain farm in Altai Territory. Nauka
i pered.op. v sel'khoz.no.9:45-46 S '56. (MLRA 9:10)

1. Zootekhnika po ptitsevodstvu sovkhoza "Proletariy" Altayskogo
kraya.

(Altai Territory--Poultry)

MAKAROVA, L.S., zootekhnik po ptitsevodstvu.

Large-scale raising of ducks on the "Proletarii" State Farm. Zhivotno-
vodstvo 20 no.3:74-75 Mr '58. (MIRA 11:2)

1. Sovkhoz "Proletariy," Troitskogo rayona Altayskogo kraya.
(Ducks)

L 39788-66

ACC NR: AT60123713

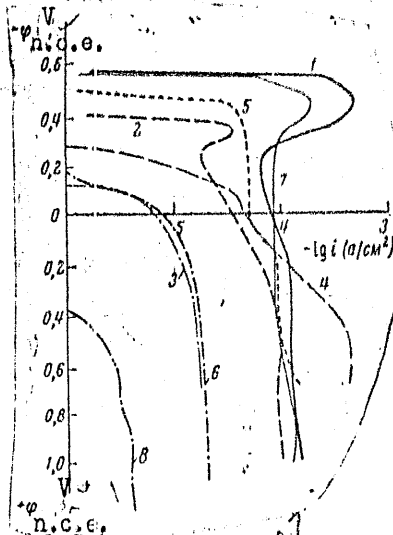


Fig. 2. Curves of anode polarization of titanium and its alloys in 6-N solution of HCl at 20°C:
 1 - Ti; 2 - Ti + 0.1% Pd;
 3 - Ti + 0.2% Pd; 4 - Ti + 32% Mo;
 5 - Ti + 30% Nb;
 6 - Ti + 30% Nb + 10% Mo;
 7 - Ti + 20% Ta; 8 - Ta.

media by alloying with palladium, molybdenum, copper, and other elements. Orig. art. has: 7 figures and 2 tables.

SUB CODE: 11/

SUBM DATE: 02Dec65/

ORIG REF: 005

Card 3/3 MLP

L 39788-66

ACC NR: AT6012378

case, the rate of titanium corrosion did not exceed 0.01 mm/yr. The second group of media contained materials of the aniline dye industry. VT1-1 titanium is found to compare favorably with various steels (OKh23N28M3D3T, EI-943), Kh18N9T, Kh17N13M3T, and EI-639 and EP-375 alloys. Pitting, corrosion cracking, and contact corrosion are also examined (see Fig. 1). The corrosion resistance of titanium alloys is

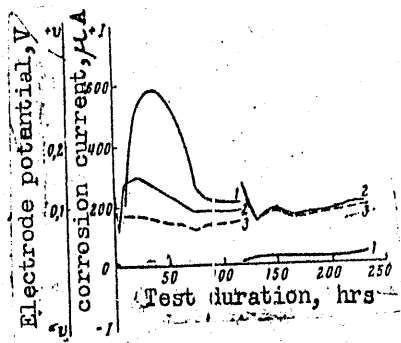


Fig. 1. Corrosion current and electrode potentials of galvanic cell with VT1-1 titanium and OKh23N28M3D3T steel as functions of test duration in solution with $KClO_3$ at 95°C:
1 - pair current; 2 - potential of VT1-1;
3 - potential of steel.

examined (see Fig. 2). Technically pure titanium (VT1-1) is found to be suitable for welded heat-exchange, filtering, and other apparatus. The corrosion resistance of VT1-1 titanium can be increased for hydrochloric acid, sulfuric acid, and organic

Card 2/3

L 39788-66 EWT(m)/EWP(v)/T/EWP(t)/ETI/EWP(k) LJP(c) JD/HM/JG/WB/GI -2

ACC NR: AT6012378

SOURCE CODE: UR/0000/65/000/000/0110/0118

AUTHORS: Shvarts, G. I.; Makarova, L. S.

ORG: none

TITLE: Titanium and its alloys as corrosion-resistant materials for chemical machine construction

SOURCE: Soveshchaniye po metallokhimii, metallovedeniyu i primeneniyu titana i yego splavov, 6th. Novyye issledovaniya titanovykh splavov (New research on titanium alloys); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1965, 110-118

TOPIC TAGS: WELD EVALUATIONS, CORROSION RATE; titanium alloy, titanium, corrosion resistant metal, corrosion resistant alloy, stainless steel, alloy/ VT1-1 titanium, OT4 titanium alloy, OKh23N28M3D3T stainless steel, Kh18N9T stainless steel, Kh17N13M3T stainless steel, EI-639 alloy, EP-375 alloy

ABSTRACT: The results of tests of the technological properties and corrosion resistance of VT1-1 titanium and OT4 titanium alloy and their welded joints in various corrosive media are given. The first group of media--for producing chlorine dioxide and for bleaching with chlorine dioxide and sodium chlorite--pertains to those in which VT-1 titanium is the only corrosion-resistant structural material. In this

Card 1/3

SHVARTS, G.L., kand.tekhn.nauk; MAKAROVA, L.S., inzh.

Application fields of titanium for the equipment of chemical
industries. Khim. mashinostr. no. 6:18-23 N-D '62. (MIRA 17:9)

Titanium applications in . . .

S/184/62/000/006/004/008
D040/D112

titanium, tungsten and molybdenum, nickel, etc. Recommendations are given as to the processes or media in which VT1 can be used and in which it cannot. VT1 is being produced in the USSR in 0.5 to 70 mm thick sheets, as well as in the form of forgings, bars, wire and tubes. NIKHIMASH found that forming processes without heating to high temperature do not affect the corrosion resistance of Ti. There is 1 table.

Card 2/2

s/104/62/000/006/004/006
D040/D112

AUTHORS: Shvarts, G.L., Candidate of Technical Sciences; Makarova,
L.S., Engineer

TITLE: Titanium applications in chemical industry equipment

PERIODICAL: Khimicheskoye mashinostroyeniye, no.6, 1962. 16-23

TEXT: Recommendations are made on the applications of BT1 (VT1) commercially pure titanium and OT4 (OT4) titanium alloy with Al and Mn in the chemical industry, based on extensive tests and electronographic investigations at NIIMKHEMASH. Titanium is especially considered as a replacement for scarce and expensive nickel alloys and high-alloy special steels. Chemical machine-building plants are now starting to produce reactors, separators, filters and heat exchangers from titanium. The results of corrosion tests of VT 1 and OT 4, considered the best Ti compositions for the chemical industry, are given in a table in comparison with three high-alloy steels. The tests were conducted in various media characteristic in the production of synthetic fibers, dyes, sulfuric acid, carbamide,

Card 1/2

SHVARTS, G.L., kand.tekhn.nauk; CHISTYAKOVA, A.N., inzh.; MAKAROVA, L.S.

Manufacture of chemical equipment from titanium. Khim.
mash. no.4:8-10 J1-Ag '60. (MIRA 13:7)
(Chemical engineering--Equipment and supplies)
(Titanium)

KOPEYKOVSKIY, V.M., kand. tekhn. nauk; NEBROYEVA, L.G., inzh.; GARBUZOVA,
G.I., inzh.; MAKAROVA, L.P., inzh.

Drying and threshing of castor plant bolls under industrial
conditions. Masl.-zhir. prom. 29 no.10:28-30 0 '63.

(MIRA 16:12)

1. Krasnodarskiy institut pishchevoy promyshlennosti (for
Kopeykovskiy, Nebroyeva, Garbuzova). 2. Krasnodarskiy
maslozavod No.2 (for Makarova).

L 11589-66	EWI(m)/EWP(t)/EWP(b)/EWA(h)	JD
ACC NR: AP600037	SOURCE CODE: UR/0286/65/000/021/0091/0091	
AUTHORS: Shaposhnikov, A. P.; Zolotov, I. N.; Suvareva, V. S.; Borukhin, B. Ya.; Makarova, L. N.; Luchanikov, F. I.; Markov, P. F.		
ORG: none		
TITLE: Method for correcting the chemical composition of fused metallurgical slags. Class 80, No. 176197		
SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 21, 1965, 91		
TOPIC TAGS: slag, synthetic slag, metallurgical process, metallurgy		
ABSTRACT: This Author Certificate presents a method for adjusting the chemical composition of fused metallurgical slags by introducing additives. To conserve time and energy and to obtain a homogeneous melt from the mixture of fused slag and additives, igneous rocks and industrial waste materials are used as additives. The latter are selected so that their fusion temperature is below the temperature of the fused slag. Gabbro, diabase, basalt, andesite, power plant ashes, and similar materials are used as additives. They are crushed and preheated up to their respective softening points prior to their introduction to the fused slag. The amount of additives is 50% by wt. of the total mass of the mixture.		
SUB CODE: 11/	SUBM DATE: 19Jun62	
Card 1/1 HW	UDC: 669.054.82:669.046.58	

CHUMAKOV, Yu.I.; Prinsipala uchastiye; MAKAROVA, L.N.

3-Aminopyridine. Metod. poluch. khim. reak. i prepar. no.11;
19-21 '64. (MIRA 18:12)

1. Kiyevskiy politekhnicheskoy institut. Submitted April, 1964.

GABRIL'YAN, A.M.; ZERES, I.D.; KLIMOVA, L.T.; MAKAROVA, L.N.;
TIKHOMIROVA, G.I.; SOLOMONIK, V.A.; ABRAMOVA, L.B.;
TROFIMUK, I.A.; NIKITINA, R.G.; SARKISYAN, I.S.;
GULIAYEVA, L.A., prof., otv. red.

[Mesozoic and Cenozoic sediments of the Fergana and
Issykkul' Depressions] Mezozoiskie i kainozoiskie ot-
lozhenia Ferganskoi i Issyk-Kul'skoi vpadin. Moskva,
Nauka, 1965. 259 p. (MIRA 18:4)

1. Moscow. Institut geologii i razrabotki goryuchikh
iskopayemykh.

DIKENSHTeyN, G.Kh.; KUTUZOVA, V.V.; MASHRYKOV, K.K.; BABAYEV, A.G.;
 POL'STER, L.A.; YUFEREV, R.F.; SHISHOVA, A.I.; BAREYEV,
 R.A.; MAKAROVA, L.N.; MURADOV, K.; PYANOVSKAYA, I.A.;
 SEMOV, V.N.; SIROTINA, Ye.A.; TURKINA, I.S.; FEL'DMAN,
 S.L.; KHON, A.V.; KUNITSKAYA, T.N.; GOLENKOVA, N.P.;
 ROSHINA, V.M.; FARTUKOV, M.M.; SHCHUTSKAYA, Ye.K.;
 ALTAYEVA, N.V.; BYKADOROV, V.A.; KOTOVA, M.S.; SMIRNOV,
 L.M.; IBRAGIMOV, M.S.; KRAVCHENKO, M.F.; MARKOVA, L.P.;
 ROZYIEVA, T.R.; UZAKOV, O.; SLAVIN, P.S.; NIKITINA, Ye.A.;
 MILOGRADOVA, M.V.; BARTASHEVICH, O.V.; STAROBINETS, I.S.;
 KARIMOV, A.K.

[Splicing of the wires of overhead power transmission lines]
 Soedinenie provodov vozduzhnykh linii elektropredachi. Mo-
 skva, Energiia, 1964. 69 p. (Biblioteka elektromontera,
 no.132) (MIRA 17:9)

TURSIN, V.M.; CHEBOTAREVA, L.G.; MAKAROVA, L.N.; KOLOTILOVA, N.D.

Production of 2-methyl-4-amino-5-acetamidomethylpyrimidine. Trudy
VNIVI 8:35-38 '61. (MIRA 14:9)

1. Laboratoriya vitaminov kompleksa B Vsesoyuznogo nauchno-issledovatel'skogo instituta.

(Pyrimidine)

BROD, I.O.; MAKAROVA, L.N.; POL'STER, L.A.

Method for correlating layers by means of establishing vertical control on outcropping beds. Izv.vys.ucheb.zav.; neft' i gaz 3 no.2:3-8 '60. (MIRA 13:6)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova, Kompleksnaya yuzhnaya geologicheskaya ekspeditsiya AN SSSR. (Kara-Bogaz region--Geology, Stratigraphic)

MAKAROVA, L. N.

L. M. Volkova, K. A. Andrianov, G. Ye. Golubkov, L. N. Makarova, and V. A. Odinets, "The Introduction of Polar Groups into Organic Radical at the Silicon Atom."

Report presented at the Second All-Union Conference on the Chemistry and Practical Application of Silicon-Organic Compounds held in Leningrad from 25-27 September 1958.

Zhurnal prikladnoy khimii, 1959, Nr 1, pp 238-240 (USSR)

DOMARADSKIY, I.V.; MAKAROVA, L.K.; AZARGINOVA, F.S.; SHCHEKUNOVA, Z.I.;
SHERSHNEV, P.A.

Immunological effectiveness of a lysed cholera vaccine. Dokl.
Irk. gos. nauch.-issl. protivochum. inst. no.5:61-66 '63
(MIRA 18:1)

ABDULIN, P.S.; GONCHAROV, O.K.; MASLOV, I.I.; LEBEDEVA, M.N.; MAKAROVA,
I.I.; DEMENT'YEVA, G.V.

Drilling in a clay gas-bearing bed using a saline drilling
fluid. Burenie no.6:18-20 '64. (MIRA 18:5)

1. Stavropol'skiy filial Groznenskogo neftyanogo nauchno-
issledovatel'skogo instituta i Moskovskiy ordena Trudovogo
Krasnogo Znameni institut neftekhimicheskoy i gazovoy
promyshlennosti im. akad. Gubkina.

KISTER, E.G.; ZLOTNIK, D.Ye.; MAKAROVA, L.I.; DEMENT'YEVA, G.V.; MARIAMPOL'SKIY,
N.A.

Treating drilling fluids with chromates. Buroie no.4:14-17 '64.
(MIRA 18:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut burovoy tekhniki;
Stavropol'skiy filial' Groznenskogo neflyanogo nauchno-issledova-
tel'skogo instituta i trest "Stavropol' neftegazrazvedka".

MARIAMPOL'SKIY, N.A.; MAKAROVA, L.I.

Trilon B as a setting inhibitor for plugging cements. Razved.
i okh. nedr 27 no.8:51-53 Ag '61. (MIRA 16:7)

1. Stavropol'skiy filial Groznenskogo nauchno-issledovatel'skogo
neftyanogo instituta.
(Stavropol Territory--Oil well cementing--Equipment and supplies)

...of tetraethoxysilane 5 corresponding tetrahydric ether alcohol, ... was obtained. It is postulated that 1, the intermediate ... of 1,1-dimethoxy-2,5-dioxo-2,5-hexane a corresponding ... which in turn, enters into a condensation reaction with ethoxy- ... resulting formation of ethyl alcohol and a Si-O-Si bonding. The con- ... was carried out under partial vacuum at 40° to 100°. The pos- ... of tetraethoxysilane and 1,1-dimethoxy-2,5- ... is excluded since no Si-O-C bondings were detected in the product.

ENCL: 00

SUB CODE: 00, 00

OTHER: 000

DOI: 10.1002/anie.200500384

[illegible]

Other authors have synthesized other alcohols containing 6-oxabicyklohexyl groups, yields of 40 to 50% of theoretical. Synthetic procedures and yields can be obtained by reference to the literature.

[illegible]

Reaction of bivalent ...

25259

S/190/61/003/007/003/021
B101/B208

was also reduced with increasing distance between the urethane groups, and the temperature range of the elastic state was increased: $n = 0$, $T_v = +20^\circ\text{C}$; $n = 10$, $T_v = -40^\circ\text{C}$. There are 1 figure, 1 table, and 2 Soviet-bloc references.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR
(Institute of Elemental-organic Compounds, AS USSR)

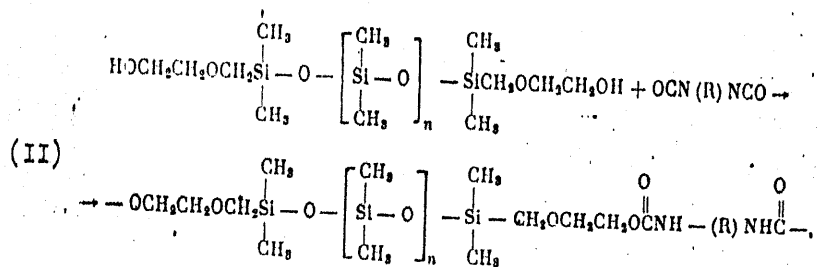
SUBMITTED: August 5, 1960

Card 4/4

Reaction of bivalent ...

25259

S/190/61/003/007/003/021
B101/B208



Neither a separation of siloxane- nor of Si-C bonds occurs. The resultant polymers were elastic and rubberlike at room temperature. They were only soluble in cresol, but not in other organic solvents. The study of the thermomechanical properties disclosed: 1) The condensation product with toluylene diisocyanate had a vitrification temperature of $+20^{\circ}\text{C}$, if alcohol with $n = 0$ was used. At $n = 20$, the vitrification temperature was -95°C . 2) In the case of hexamethylene diisocyanate, the vitrification temperature

Card 3/4

Card 3/4

Reaction of bivalent ...

25259

S/190/61/003/007/003/021
B101/B208

disiloxane with sodium glycolate. The alcohol was here obtained with $n = 0$. 2) By cohydrolysis of dimethyl diethoxy silane with heterocyclic dimethyl alkoxy silane $(CH_3)_2Si \begin{array}{l} \diagup O-CH_2 \\ \diagdown CH_2-O \end{array} CH_2$. In this case, the alcohols were obtained with $n = 10, 12, 14$ and 20 . The reaction with the diisocyanates was carried out at $190^\circ C$ without solvent. The intrinsic viscosity of the end product was found to depend on the alcohol applied. It decreased with increasing n (increasing distance between the OH groups). The condensation product with hexamethylene diisocyanate had an intrinsic viscosity of 0.45 at $n = 0$, and of 0.11 at $n = 20$. Polymer analysis indicated that the reaction proceeds according to the formula

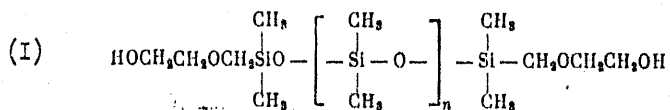
Card 2/4

15-817011.2212

25259

S/190/61/003/007/003/021
B101/B208

AUTHORS: Andrianov, K.A., Makarova, L.I.

TITLE: Reaction of bivalent organosilicon alcohols with
diisocyanatesPERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 7, 1961
966-970TEXT: The authors report on the reaction of bivalent alcohols of the
polydimethyl siloxane series with the general constitutional formula:with m-toluylene and with hexamethylene-diisocyanate. The alcohols were
synthesized 1) by interaction of bis- (chloro methyl)-tetramethyl

Card 1/4

86039

Synthesis of Diatomic Alcohols of the Siloxane S/020/60/135/003/023/039
Series. Synthesis of Bis(β -hydroxy-ethoxy- methyl)-polydimethyl Siloxanes B016/B054

authors state that BHPS are also formed here; the degree of polymerization of the compounds obtained is, however, a little higher than it would correspond to the ratio between the components used. There are 4 references: 3 Soviet and 1 US.

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk
SSSR (Institute of Elemental-organic Compounds of the Academy
of Sciences USSR)

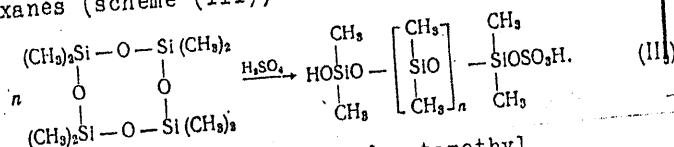
SUBMITTED: July 6, 1960

Card 5/5

86039

Synthesis of Diatomic Alcohols of the Siloxane S/020/60/135/003/023/039
 Series. Synthesis of Bis(β -hydroxy-ethoxy- methyl)-polydimethyl Siloxanes BO16/BO54

ditions, BHPS are formed with a number of dimethyl siloxane members which nearly corresponds to the number given according to the reaction. Hence, the authors conclude that the reaction exclusively proceeds according to scheme (I). The yield in BHPS attained 80%, and no polydimethyl siloxanes were formed. For the synthesis of BHPS, they also used the reaction of catalytic transformation of octamethyl cyclotetrasiloxane with H_2SO_4 . It produces linear polydimethyl siloxanes (scheme (III)).



By an adjustment of the quantitative ratio between H_2SO_4 and octamethyl cyclotetrasiloxane, the degree of polymerization can be varied within required limits. The second step of the reaction is based on a cohydrolysis of the oligomer produced according to scheme (III) with the heterocyclic derivative mentioned at the beginning. On the basis of their results, the

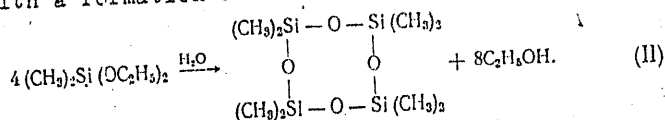
Card 4/5

86039

Synthesis of Diatomic Alcohols of the
Siloxane Series. Synthesis of Bis(β -hydroxy-
ethoxy-methyl)-polydimethyl Siloxanes

S/020/60/135/003/023/039
B016/B054

This reaction is based on the good hydrolyzability of the heterocyclic derivative. The authors made the hydrolysis in aqueous-acid medium without a solvent. The reaction proceeded according to scheme (I); it was, however, accompanied by a side reaction of the hydrolysis of dimethyl-diethoxy silane with a formation of octamethyl cyclotetrasiloxane (reaction (II)).



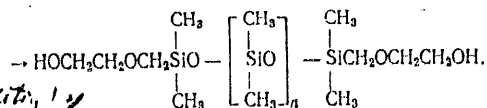
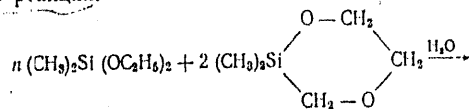
Thus, the quantitative ratio between the dimethyl-diethoxy silane used and the heterocyclic derivative was modified, which led to the formation of BHPS with about half the number of dimethyl siloxane members as would correspond to the ratio of the components used. Therefore, the authors modified the conditions of hydrolysis to reduce the side reaction by adding water according to the equations: $A = n/(n-m)$ (Ref. 4), where A is the number of dimethyl siloxane members, n the number of moles of the heterocyclic derivative, and m the mole number of water. Under these con-

Card 3/5

06039

Synthesis of Diatomic Alcohols of the Siloxane S/020/60/135/003/023/039
Series. Synthesis of Bis(β -hydroxy-ethoxy-
methyl)-polydimethyl Siloxanes B016/B054

$(\text{CH}_3)_2\text{SiOCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{Si}(\text{CH}_3)_2$, синтез которого был описан в предыдущем сообще-
щении (3), по реакции



little amount, 1%

(1)

*7.135, 3
1.555*

86039

S/020/60/135/003/023/039
B016/B054.

15.8114

AUTHORS:

Andrianov, K. A., Corresponding Member AS USSR, and
L. I. Makarova

TITLE:

Synthesis of Diatomic Alcohols of the Siloxane Series.
Synthesis of Bis(β -hydroxy-ethoxy-methyl)-polydimethyl
Siloxanes

PERIODICAL:

Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 3,
pp. 595 - 598

TEXT: The authors report on the synthesis of bivalent organosilicon alcohols with hydroxyl groups in the organic radicals. They succeeded in synthesizing such alcohols with 1, 2, 12, 13, 20, and 21 dimethyl siloxane members, namely bis(β -hydroxy-ethoxy-methyl)-polydimethyl siloxanes (BHPS) with a molecular weight of 360-1800. To produce such dimethyl-siloxane oligomers with β -hydroxy-ethoxy-methyl groups at the ends of the chain, the authors studied the hydrolysis of dimethyl-diethoxy silane with a heterocyclic derivative (the synthesis of the latter is described in the authors' paper, Ref. 3) (reaction (I)).

Card 1/5

Polycondensation of Bis-(β -hydroxy-ethoxy-
methyl)-tetramethyl Disiloxane With
Dicarboxylic Acids

83479

S/190/60/002/009/010/019
B004/B060

ASSOCIATION: Institut elementoorganicheskikh soedineniy AN SSSR
(Institute of Elemental-organic Compounds of the AS USSR)

SUBMITTED: April 11, 1960

Card 3/3

83479

Polycondensation of Bis-(β -hydroxy-ethoxy-methyl)-tetramethyl Disiloxane With Dicarboxylic Acids S/190/60/002/009/010/019
B004/B060

silicon content of the condensates. There occurred neither a cleavage of the siloxane bond in the diketo dicarboxylic acid nor a cleavage of the Si-C bond in organosilicon glycol. As is shown in Fig. 1, the acid number drops during polycondensation while the ester number rises. The polyesters obtained are high-viscous, dark-colored substances well soluble in benzene - alcohol mixture. As is shown by Fig. 2; the viscosity of polyesters rises with the number of dimethyl siloxane groups in diketo dicarboxylic acid. On the reaction of the polyester obtained from diketo dicarboxylic acid ($n=5$) with hexamethylene diisocyanate, the authors obtained an elastic, rubber-like, cresol-soluble product. The change (increase) in viscosity as dependent on the reaction period is illustrated in Fig. 3. Bis-(β -hydroxy-ethoxy-methyl)-tetramethyl disiloxane also condenses with adipic acid without a cleavage of the Si-C bond to form a polyester. Fig. 4 shows the change in the acid number and ester number during the reaction. There are 4 figures, 1 table, and 3 references: 2 Soviet and 1 US. ✓

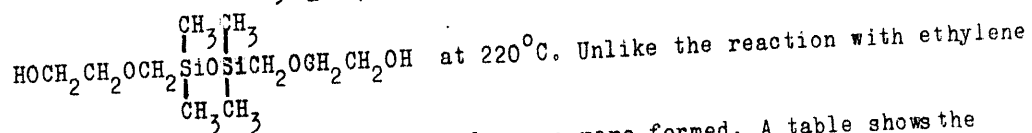
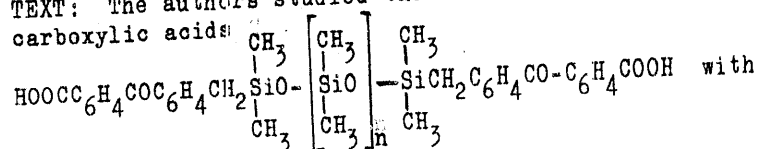
Card 2/3

53700C also 2109, 2209

S/190/60/002/009/010/019
B004/B060

AUTHORS: Andrianov, K. A., Makarova, L. I., Zharkova, N. M.
TITLE: Polycondensation of Bis-(β -hydroxy-ethoxy-methyl)-tetra-
methyl Disiloxane With Dicarboxylic Acids
PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 9,
pp. 1378-1382

TEXT: The authors studied the condensation of organosilicon diketo di-
carboxylic acids



glycol, no cyclic polydimethyl siloxanes were formed. A table shows the
Card 1/3

On the Synthesis of Bivalent Alcohols of the Siloxane SOV/20-127-6-19/51
Series. I. Interaction of Chloromethyl Dimethyl Chlorosilane and
Bis(chloromethyl)tetramethyl Disiloxane With Sodium Glycolate

tetra-methyl-disiloxane with a quantitative yield (see Scheme).
There are 5 references.

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR
(Institute of Elemental-organic Compounds of the Academy of
Sciences, USSR)

SUBMITTED: May 26, 1959

Card 3/3

On the Synthesis of Bivalent Alcohols of the Siloxane SOV/20-127-6-19/51
Series. I. Interaction of Chloromethyl Dimethyl Chlorosilane and Bis(chloromethyl)tetramethyl Disiloxane With Sodium Glycolate

The formation of the heterocyclic derivative mentioned can apparently be explained by an intermediate formation of β -oxy-ethoxy-methyl-dimethyl- β -oxy-ethoxy-silane which is then cyclized to the derivative mentioned, with separation of a glycol molecule (see Scheme). The intermediate product mentioned, however, could not be isolated. In an interaction of sodium glycolate with bis(chloromethyl)tetramethyl-disiloxane, the formation reaction of the heterocyclic derivative is likely to proceed in a still more complicated way (see Scheme). Such a reaction course (via a silanol formation), conditioned by present humidity traces, is also possible in the case of chloromethyl-dimethyl-chlorosilane. The obtained cyclic product under consideration (boiling point 138°) hydrolyzes rather easily to bis-(β -oxy-ethoxy-methyl)-tetra-methyl-disiloxane, and polymerizes while standing under normal conditions with its viscosity and molecular weight increasing at the same time. The kinetics of this polymerization is being investigated at present. Besides, it was proved that the said product can be easily hydrolyzed by a 1% HCl-solution at 60° , and is transformed into bis-(β -oxy-ethoxy-methyl)-

Card 2/3

5 (3)

AUTHORS: Anirianov, K. A., Corresponding
Member, AS USSR, Makarova, L. I.

SOV/20-127-6-19/51

TITLE: On the Synthesis of Bivalent Alcohols of the Siloxane Series.
I. Interaction of Chloromethyl Dimethyl Chlorosilane and
Bis(chloromethyl)tetramethyl Disiloxane With Sodium Glycolate

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 6, pp 1213-1216
(USSR)

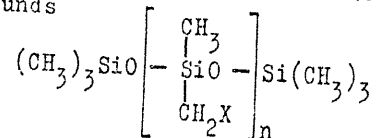
ABSTRACT: For the synthesis mentioned in the title, the reaction mentioned in the subtitle was investigated, the reaction product being subsequently transformed into bis-(β -oxy-ethoxy-methyl)-tetramethyl disiloxane. Although the reaction course described in scheme (I) was to be expected, it still proved to be much more complicated. The two chlorine atoms: the one bound to silicon, and the one belonging to the chloromethyl group, can both be easily substituted by a glycol residue. But no β -oxy-ethoxy-methyl-dimethyl- β -oxy-ethoxy-silane was formed; neither was it formed in the reaction last mentioned in the subtitle (II). In both cases mentioned, a relatively low-boiling heterocyclic derivative was formed (see Scheme). The substitution of the two halogen atoms occurred, in both cases, with 95% at 100° within 2 h.

Card 1/3

Synthesis and Investigation of Properties of
Liquid Polydimethylsiloxanes Containing Ether Groups in Radicals

SOV/62-59-3-11/37

lengthening of the chain of the polymeric molecule (Figs 1,2,3). The energy of activation of the viscous flow which was computed for the temperature range of 0-100° according to the equation of Arrhenius depends on the nature of the polar group contained in the molecule. According to the efficacy of their influence upon the forces of the intermolecular interaction in the compounds



the groups investigated may be arranged in the following order $-\text{NHC}_6\text{H}_5 > -\text{OCOCH}_3 > -\text{Cl} > -\text{OC}_2\text{H}_5 > -\text{OCH}_3 > -\text{N}(\text{C}_2\text{H}_5)_2 > -\text{H}$. There are 3 figures, 3 tables, and 11 references, 5 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR
(Institute of Elemental Organic Compounds of the Academy of Sciences, USSR)

SUBMITTED: June 13, 1957
Card 2/2

5(3) .

AUTHORS:

Andrianov, K. A., Makarova, L. I.

SOV/62-59-3-11/37

TITLE:

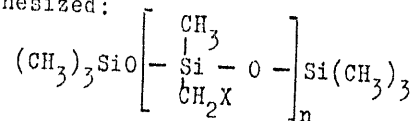
Synthesis and Investigation of Properties of Liquid Polydimethylsiloxanes Containing Ether Groups in Radicals (Sintez i issledovaniye svoystv zhidkikh polidimetilsiloksanov, soderzhashchikh efirnyye gruppy v radikalakh)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 3, pp 450-459 (USSR)

ABSTRACT:

In the present paper new liquid, linear organosilicon polymers of different polymerization degree with the following structure were synthesized:



X = $-\text{OCH}_3$; $-\text{OC}_2\text{H}_5$; $-\text{OCOCH}_3$. The properties of these compounds are given in tables 1 and 2. The physical properties of these compounds which were precipitated in pure form, were determined and the dependence of the viscosity on temperature in the range of $-20 - +100^\circ$ was investigated. It was found that the viscosity dependence on temperature increases with the

Card 1/2

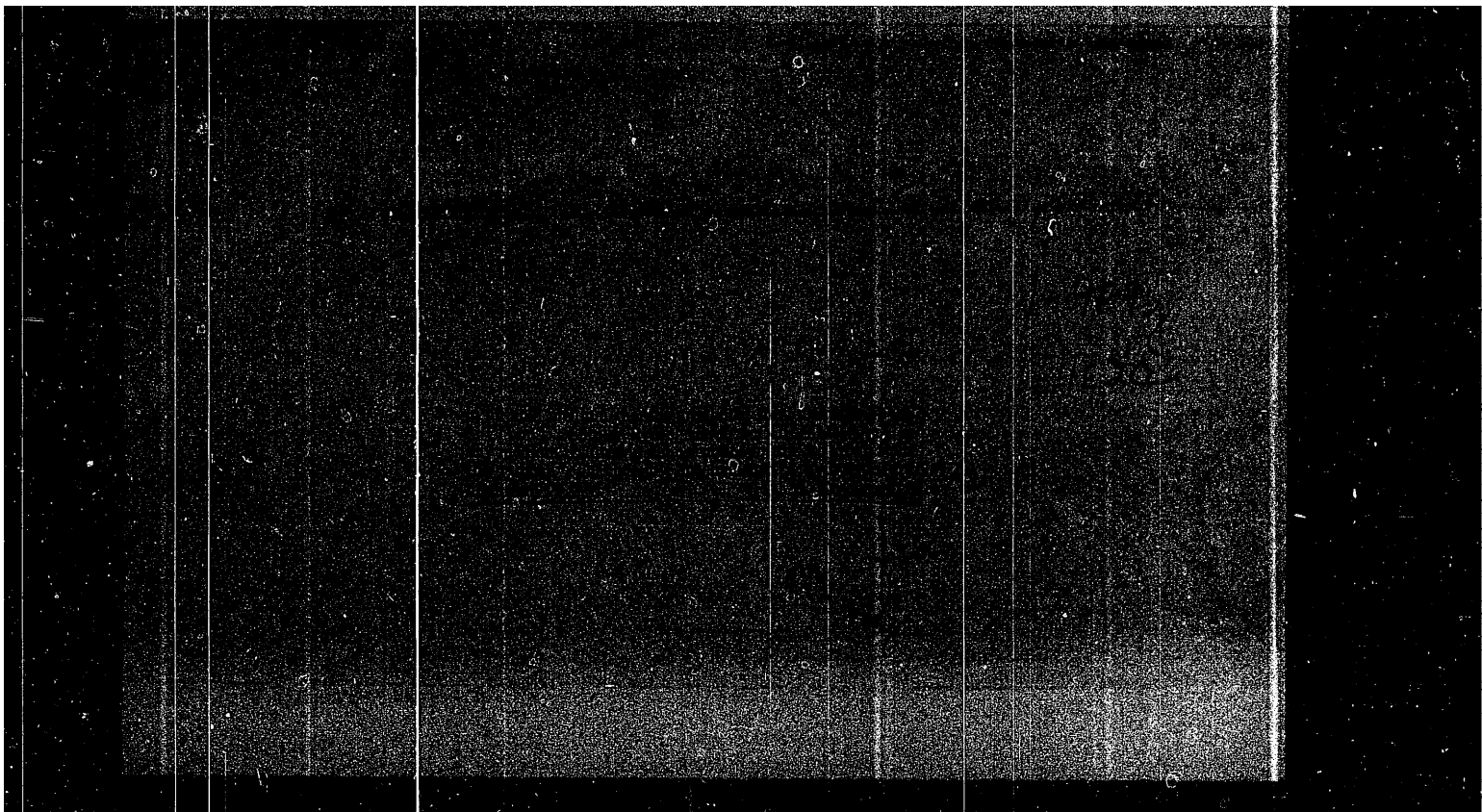
MAKAROVA, L.I.

KULAKOVA, R.V., kandidat tekhnicheskikh nauk; MIRZOYEV, A.G., inzhener;
UKISTIN, E.F., inzhener; KHUDYAKOVA, V.A., inzhener; MAKAROVA, L.I.,
inzhener.

Electric strength of main cables having paper cord-styroflex
insulation. Vest. elektroprom. 28 no.4:31-35 Ap '57. (MIRA 10:6)

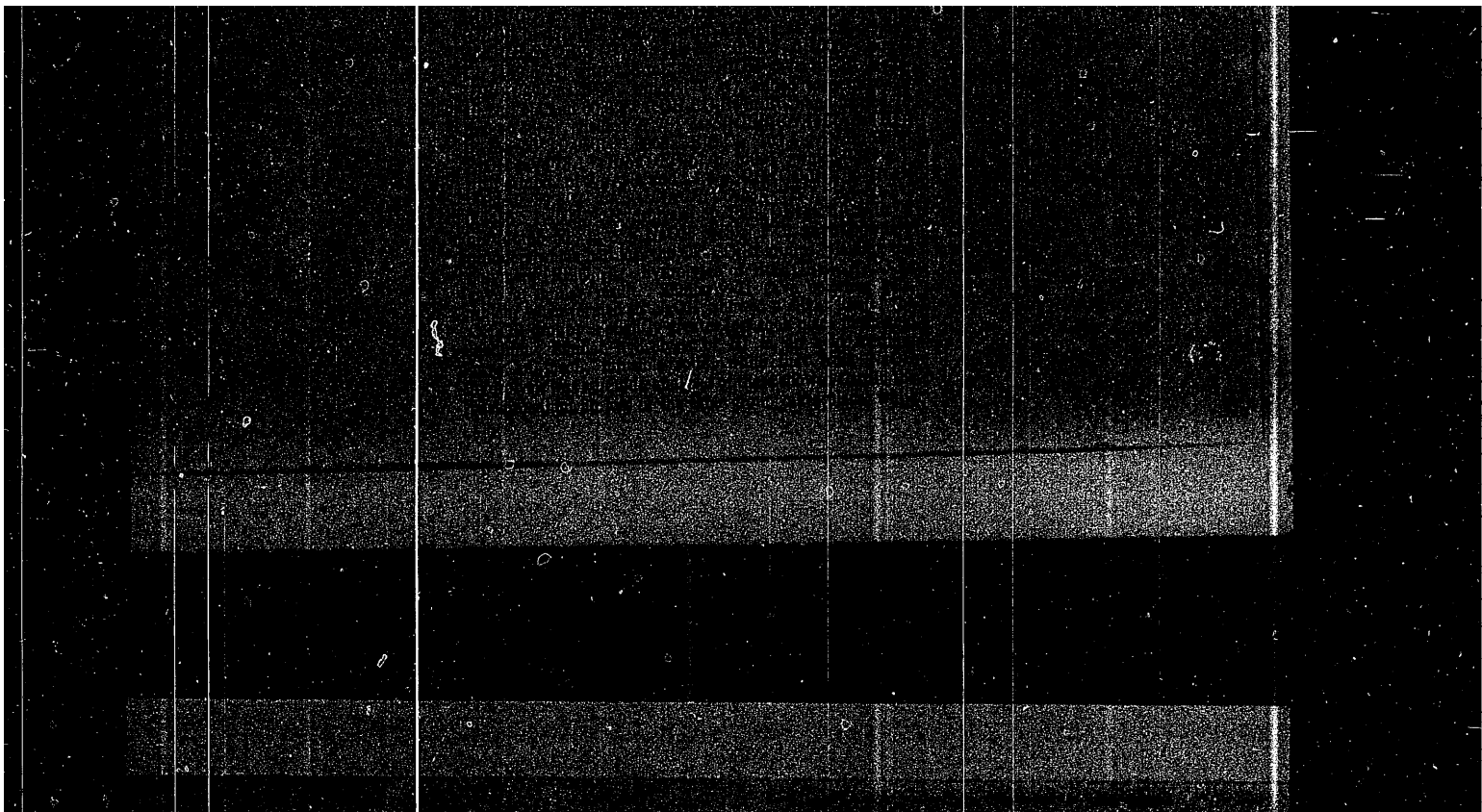
1. Nauchno-issledovatel'skiy institut kabel'noy promyshlennosti.
(Electric cables)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031500032-6



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MAKAROVA, L.I.

SHCHELOCHKOVA, S.P.; MAKARTSEVA, T.V.; GARSHIN, Ye.A.; MOISEYEVA, Ye.I.;
BLAGODAROVA, T.N.; MAKAROVA, L.I.; MEL'NIKOVA, R.M.; REVIZOVA, V.Ye.;
YUSHEVICH, G.I.; YEVPRYNTSEVA, Z.A.; GALYAMOVA, M.P.; DROMOVA, L.M.;
SALIKOVA, V.N.; KONNOV, F.Ya., red.; ANTONOV, V.P., tekhn.red.

[Economy of the province and city of Kuybyshev; a statistical
manual] Narodnoe khoziaistvo Kuibyshevskoi oblasti i goroda Kuibysheva;
statisticheskii sbornik. Kuibyshev, Kuibyshevskoe otd-nie Gosstat-
izdata, 1957. 197 p. (MIRA 11:3)

1. Kuybyshevskaya oblast'. Statisticheskoye upravleniye. 2. Statisti-
cheskoye upravleniye Kuybyshevskoy oblasti (for all, except Konnov,
Antonov)

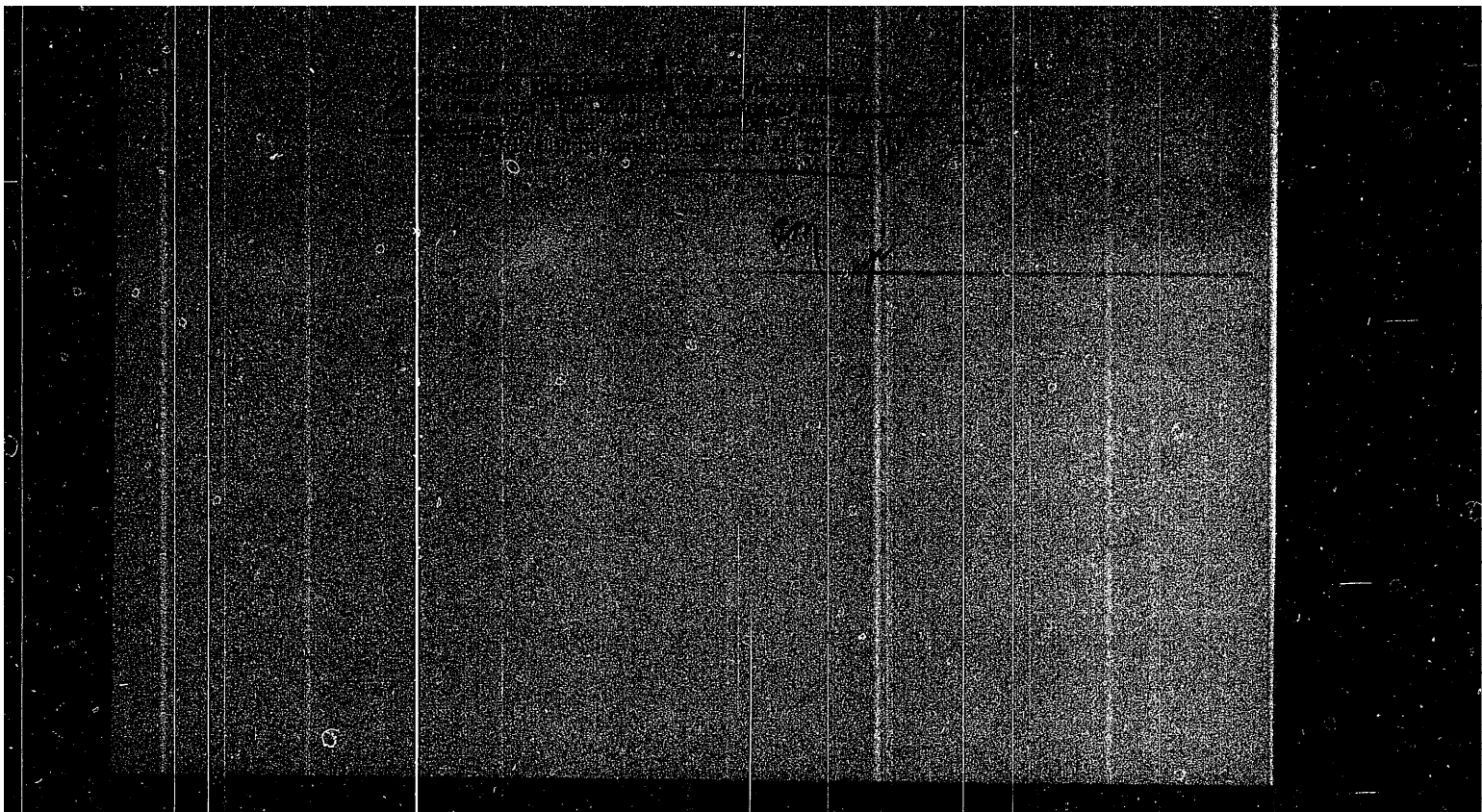
(Kuybyshev Province--Statistics)

ANDRIANOV, K.A.; MAKAROVA, L.I.

Synthesis of alkylalkoxysilanes and alkylacetoxysilanes with ether groups in the radical. Izv.AN SSSR Otd.khim.nauk no.6:702-706 Je '56. (MIRA 9:9)

1.Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR.
(Silane)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031500032-6



APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031500032-6

62
 synthesis of (chloromethyl)alkoxysilanes and the replacement of their halogen by ester groups. K. A. Antikhanov, L. I. Makarova, L. M. Volkova, and V. A. Odintsov. *Doklady Akad. Nauk S.S.S.R.* 95, 209-72 (1954).
 $\text{ClCH}_2\text{SiCl}_3$ (96 g.) treated over 1 hr. with 100 g. iso- PrOH , the mixt. heated 5 hrs. to 120° , and the product divid. yielded 86 g. (59%) $(\text{iso-PrO})_2\text{SiCH}_2\text{Cl}$, b. $195-8^\circ$, n_D^{20} 1.4145, d_4^{20} 0.9836. Similarly were prepd. the following (% yield, b.p., n_D^{20} , and d_4^{20} given): $(\text{iso-BuO})_2\text{SiCH}_2\text{Cl}$, 82, $234-7^\circ$, 1.4235, 0.9577; $(\text{BuO})_2\text{SiCH}_2\text{Cl}$, 72, $243-4^\circ$, 1.4270, 0.9635; $(\text{iso-AmO})_2\text{SiCH}_2\text{Cl}$, 64.7, $278-80^\circ$, 1.4285, 0.9565; $(\text{iso-PrO})_2\text{SiMeCH}_2\text{Cl}$, 72, $177-8^\circ$, 1.4135, 0.9640; $(\text{iso-BuO})_2\text{SiMeCH}_2\text{Cl}$, 72, $214-15^\circ$, 1.4220, 0.9472; $(\text{BuO})_2\text{SiMeCH}_2\text{Cl}$, 77.5, $225-7^\circ$, 1.4290, 0.9507; $(\text{iso-AmO})_2\text{SiMeCH}_2\text{Cl}$, 88, $243-4^\circ$, 1.4300, 0.9414. To 2.01 g. powd. Na under xylene was added 6.02 g. EtOH , the mixt. heated until the Na had reacted, and the suspended EtONa treated with 30 g. $(\text{BuO})_2\text{SiMeCH}_2\text{Cl}$; after 5 hrs. at 100° the mixt. yielded 51% $(\text{BuO})_2\text{SiMeCH}_2\text{OEt}$, b. $120-3^\circ$, n_D^{20} 1.4108, d_4^{20} 0.9544; similarly was prepd. 46% $(\text{BuO})_2\text{SiCH}_2\text{OEt}$, b. $115-17^\circ$, n_D^{20} 1.4237, d_4^{20} 0.9079. G. M. Kozolapov

3

MAKAROVA, L. I.

USSR/Chemistry - Fuels

FD-1609

Card 1/1 : Pub. 129-12/23

Author : Margolis, Ye. I.; Makarova, L. I.

Title : Concerning the catalytic isomerization of pentamethylene hydrocarbons. Report III. Studying the behavior of n-amylicyclopentane in the presence of palladiumated asbestos

Periodical : Vest. Mosk. un., Ser. fizikomat. i yest. nauk, 9, No 8, 79-82, Dec 1954

Abstract : At 305-310 degrees, and in a weak stream of hydrogen, n-amylicyclopentane partially isomerizes into a hydrocarbon having a six-membered ring which subsequently aromatizes (13-16%). There is practically no rupture of the carbon-carbon bond of the five-membered ring and only traces of paraffin hydrocarbons are detected in the catalysis product. The activity of the catalyst decreases after repeated use, but can be restored by heating in air. One table, Seven references (five USSR).

Institution : Chair of Organic Chemistry

Submitted : June 7, 1954

L 31365-66 EWP(j)/EWT(m)/T RM

ACC NR: AP6021105

SOURCE CODE: UR/0062/66/000/002/0387/0387

AUTHOR: Polovyanyuk, I. V.; Chapovskiy, Yu. A.; Makarova, L. G.

ORG: Institute of Organoelemental Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy)

TITLE: Photochemical synthesis of π -C sub 5 H sub 5 Fe(CO)[P(C sub 6 H sub 5)] I

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 2, 1966, 387

TOPIC TAGS: photochemistry, organic synthetic process, UV irradiation, molecular structure, IR spectrum, absorption band, coordination chemistry, chemical synthesis

ABSTRACT: The authors have established that $[\pi\text{-C}_5\text{H}_5\text{Fe(CO)}_2]_2$ reacts with $\text{P(C}_6\text{H}_5\text{)}_3$ and $\text{C}_6\text{H}_5\text{I}$, but does not react with each of the components separately, when the reaction mixture is irradiated with ultraviolet light. In this case, $\pi\text{-C}_5\text{H}_5\text{Fe(CO)[P(C}_6\text{H}_5\text{)}_3]$ is formed, whose structure has been confirmed by direct synthesis from $\pi\text{-C}_5\text{H}_5\text{Fe(CO)}_2\text{I}$ and $\text{P(C}_6\text{H}_5\text{)}_3$ (UV-radiation for 4 hours, 25° , tetrahydrofuran (THF)). The identity of the compounds was established from their infrared spectra, in particular, those containing absorption bands in the region $700\text{--}800$ and 1100 cm^{-1} , which can be related according to literature data to oscillations in the coordinated molecule $\text{P(C}_6\text{H}_5\text{)}_3$, and also to the absorption band in the 1950 cm^{-1} region, corresponding to the valency oscillations of the CO-group. The product yield is 87% of reacted $[\text{C}_5\text{H}_5\text{Fe(CO)}_2]_2$. [JPRS]

SUB CODE: 07 / SUBM DATE: 06Dec65 / ORIG REF: 001 / OTH REF: 001

Card 1/1

UDC: 541.14+547.1'3+661.718.1

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031500032-6

MAKAROVA, Lyubov' Gennadiyevna; NEMMEYANOV, A.N.

[Mercury] Rtut'. Moskva, Nauka, 1965. 438 p.
(MIRA 19:1)

NESMEYANOV, A.N.; MAKAROVA, L.G.; POLOVYANYUK, I.V.

Production of organomercury compounds by the decomposition of double salts of aryl diazonium chloride and mercuric chloride in water. Zhur. ob. khim. 35 no.4:681-683 Ap '65.

(MIRA 18:5)

MAKAROVA, Lyubov' Gennadiyevna; NESMEYANOV, Aleksandr Nikolayevich;
KOCHESHKOV, K.A., oiv. red.; RODIONOV, A.N., red.

[Methods of organometallic chemistry; mercury] Metody
elementoorganicheskoi khimii; rtut'. Moskva, Nauka, 1965.
438 p. (MIRA 18:7)

1. Chlen-korrespondent AN SSSR (for Kocheshkov).

NESMEYANOV, A.N.; CHAPOVSKIY, Yu.A.; MAKAROVA, L.G.

Arylation of π -C₆H₅Fe(CO)₂Na by onium salts. Izv. AN SSSR. Ser. khim.
no.7:1310-1311 '65. (MIRA 18:7)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

Synthesis of aromatic germanium ...

33265
S/062/62/000/001/004/015
B106/B101

some cases from the mother liquors, and the resulting aryl germanium compounds were separated in the form of oxides. The molecular weight of some soluble diaryl germanium oxides was determined cryoscopically in benzene. There are 1 table and 9 references: 1 Soviet and 8 non-Soviet. The three most recent references to English-language publications read as follows: O. H. Johnson, D. M. Harris, J. Amer. Chem. Soc. 72, 5564 (1950); F. C. Whitmore, R. J. Sobatzki, J. Amer. Chem. Soc. 55, 1128 (1933); J. K. Simons, E. C. Wagner, J. H. Müller, J. Amer. Chem. Soc. 55, 3705 (1933).

ASSOCIATION: Institut elementoorganicheskikh sovedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR)

SUBMITTED: July 17, 1961

Table. Organic germanium compounds.

Legend: (1) substance; (2) m., °C; (3) obtained here; (4) according to published data; (5) solvent for crystallization; (8) n-heptane;

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Synthesis of aromatic germanium ...

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following the pattern $C_6H_5HgI + GeI_2 \rightarrow C_6H_5GeI_3 + Hg$;
 $C_6H_5HgI + C_6H_5GeI_3 \rightarrow (C_6H_5)_2GeI_2 + HgI_2$; $2HgI_2 + GeI_2 \rightarrow GeI_4 + Hg_2I_2$.
 The influence of the reaction conditions on the degree of arylation and on the yield of organogermanium compounds was also studied. Quantitative proportions and, above all, the sequence of combination of the reactants affect both the yield and the degree of arylation. To achieve a predominant formation of Ar_2GeI_2 , Ar_2Hg must be added in portions to a small GeI_2 excess. An attempt to alkylate Ar_3GeI completely by boiling for many hours with the equimolecular amount of Ar_2Hg in absolute xylene failed. Ar_2Hg reacted only with Ar_3GeI to form $ArHgI$. The simultaneous formation of $(Ar_3Ge)_2O$ is probably caused by the oxidation of the $ArGe$ radical by atmospheric oxygen. Separation of the organogermanium iodides, especially Ar_3GeI and Ar_2GeI_2 , is sometimes difficult owing to their similar solubility. Therefore, the reaction products, or the residues remaining after the separation of the principal amounts of iodides were hydrolyzed in

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E106/B101

Synthesis of aromatic germanium ...

yield of 40-75%, related to the admixture of aryl radical. Compounds of the Ar_4Ge type are not formed. The composition of the reaction products suggests that the reaction $\text{Ar}_2\text{Hg} + \text{GeI}_2 \rightarrow \text{Ar}_2\text{GeI}_2 + \text{Hg}$ (I) takes place as the main reaction. Ar_3Ge is probably formed by further reactions following the pattern $\text{Ar}_2\text{Hg} + \text{Ar}_2\text{GeI}_2 \rightarrow \text{Ar}_3\text{GeI} + \text{ArHgI}$ (II). This reaction is facilitated by the fact that both reactants are present in a dissolved form. In the presence of orthosubstituents in the Ar_2Hg molecule complicating reaction (II), no Ar_3GeI is formed. In some cases, a small amount of ArGeI_3 is formed, probably owing to the reaction $\text{ArHgI} + \text{GeI}_2 \rightarrow \text{ArGeI}_3 + \text{Hg}$ (III). In a special experiment, the reaction of equimolecular amounts of $\text{C}_6\text{H}_5\text{HgI}$ and GeI_2 boiled in toluene for 15 min was investigated. Similar to the reactions with Ar_2Hg , metallic mercury was deposited immediately. Apart from a small portion of the initial $\text{C}_6\text{H}_5\text{HgI}$, the reaction products contained 31.09% of $\text{C}_6\text{H}_5\text{GeI}_3$, 50.63% of $(\text{C}_6\text{H}_5)_2\text{GeI}_2$, Hg , Hg_2I_2 , and GeI_4 . Obviously, $\text{C}_6\text{H}_5\text{HgI}$ reacts with GeI_2 like $(\text{C}_6\text{H}_5)_2\text{Hg}$.

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33265

S/062/62/000/001/004/015
B106/B101

53700 1273

AUTHORS: Yemel'yanova, L. I., Vinogradova, V. N., Makarova, L. G.,
and Nesmeyanov, A. N.

TITLE: Synthesis of aromatic germanium compounds by reaction of
diaryl mercury with germanium diiodide

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh
nauk, no. 1, 1962, 53-59

TEXT: Organic germanium compounds were synthesized by reaction of GeI_2
with diphenyl, di-p-tolyl, di-m-tolyl, di-o-tolyl, di-p-chloro-phenyl,
di-m-chloro-phenyl, di-o-chloro-phenyl, di-p-bromo-phenyl, di-o-bromo-phenyl,
di-p-methoxyphenyl, di-p-ethoxyphenyl, di-o-ethoxyphenyl, and di- β -naphthyl
mercury. The reaction takes place when boiling equimolecular amounts of
 GeI_2 and Ar_2Hg in toluene for 15-30 min. The reaction products contain Hg ,
 Hg_2I_2 , HgI_2 , $\text{GeO}_2(\text{GeI}_4)$, ArHgI , sometimes part of the initial Ar_2Hg , and
the organogermanium compounds Ar_2GeI_2 , Ar_3GeI , and ArGeI_3 . The main products
are the relevant diarylated germanium compounds which are obtained in a

Card 1/74

MAKAROVA, L.G.; MATVEYEVA, M.K.

Decomposition of phenyldiazonium borofluoride in nitrobenzene in
the presence of powdered zinc, cadmium, and silver. Izv.AN SSSR.
Otd.khim.nauk no.10:1898-1899 O '61. (MIRA 14:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Diazonium compounds)

New Method of Synthesizing Aromatic Germanium Compounds

86485

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR (Institute of Elemental-organic Compounds of the Academy of Sciences USSR)

S/062/60/000/011/016/016
B013/B078

SUBMITTED: July 8, 1960

Формула	Т. пл., °C	Выход, %	Формула	Т. пл., °C	Выход, %
$(C_6H_5)_2GeJ_2$	62-64	69	$(p-ClC_6H_4)_2GeJ_2$	61-63	73
$(C_6H_5)_2GeJ$	152-154	25,7	$(o-BrC_6H_4)_2GeJ_2$	155,5-	68
$(p-CH_3C_6H_4)_2GeO$	221,5-	63,7	$(p-BrC_6H_4)_2GeJ$	157,5	64
$(o-CH_3C_6H_4)_2GeJ_2$	222,5		$(p-CH_3OC_6H_4)_2GeJ$	170-171	28
$(m-CH_3C_6H_4)_2GeJ$	85-88,5	45,7	$(o-C_6H_4OC_6H_4)_2GeJ$	114-115	80
$(p-ClC_6H_4)_2GeJ_2$	76-77,5	60	$(o-C_6H_4OC_6H_4)_2GeJ_2$	95,5-97	53,5
$(p-ClC_6H_4)_2GeJ$	67,5-68	74	$(\beta-C_{10}H_7)_2GeJ$	137-138	62
$(o-ClC_6H_4)_2GeJ_2$	133-134	7	$(\beta-C_{10}H_7)_2GeO$	174-176	50
	124-	33,7		211-	14,7
	125,5			212,5	

Table

Legend to the table:

Formula

Melting temperature, °C | Yield, %

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5.3770

86485

S/062/60/000/011/00/00
B013/B070

AUTHORS:

Yemel'yanova, L. I., Makarova, L. G.

TITLE:

New Method of Synthesizing Aromatic Germanium Compounds

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1960, No. 11, p. 2067

TEXT: In this "Letter to the Editor", the authors report on a new method of synthesizing aromatic germanium compounds. It was shown that the reaction of diaryl mercury with divalent germanium salts leads to higher arylated germanium compounds than arylation with germanium tetrachloride (Ref.1) which gives only monoaryl germanium compounds. Equimolecular quantities of diaryl mercury and germanium iodide boiled in toluene for 15 min give organic diaryl and triaryl germanium compounds with good yields. The reaction proceeds according to the following scheme: $\text{GeI}_2 + \text{Ar}_2\text{Hg} \rightarrow \text{Ar}_2\text{GeI}_2 + \text{Ar}_3\text{GeI} + \text{AgHgI} + \text{Hg}$. Results are collected in a table. There are 1 table and 1 non-Soviet reference.

Card 1/2

Decomposition of Aryldiazonium Boron Fluorides in Nitrobenzene and Ethyl Benzoate in the Presence of Free Metal - Copper Powder S/062/60/000/011/005/016 BC13/5078

products separated were the ortho-isomer 2-nitro-4'-carbethoxydiphenyl and the meta-isomer 3-nitro-4'-carbethoxydiphenyl, which was formed in a smaller quantity. In this case, like in the decomposition of paramethoxy and parachlorophenyldiazonium boron fluorides, symmetrical azocompounds were isolated from the reaction products: the diethyl ester of azobenzene dicarboxylic -4,4'-acid, 4,4'-dioxyazobenzene, and 4,4'-dichlorobenzene. Besides, products of normal thermal decomposition were isolated in two cases: biaryl and an organofluorine compound. The formation of homolytic reaction products thus indicates that the heterolytic decomposition mechanism of aryldiazonium boron fluorides in the presence of a metal changes into a homolytic one. There are 6 references: 1 Soviet. ✓

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental-organic Compounds of the Academy of Sciences USSR)

SUBMITTED: June 19, 1959

Card 3/3

Decomposition of Aryldiazonium Boron Fluorides in Nitrobenzene and Ethyl Benzoate in the Presence of Free Metal - Copper Powder

S/062/60/000/011/005/016
B013/B078

in ethyl benzoate in the presence of excess copper powder likewise according to a homolytic mechanism. The reaction products showed no traces of phenyl benzoate. The main product formed with the entrance of phenyl into the nucleus was the ethyl ester of biphenyl carboxylic acid. The meta-isomer formed only in a slight quantity. During the decomposition of aryldiazonium boron fluorides with aryls - phenyl, paratolyl, ortho-carbomethoxyphenyl - in the presence of copper in nitrobenzene, aryl enters only the para and ortho positions to the nitro group of nitrobenzene; 4-nitrodiphenyl, 2-nitrodiphenyl, 2-carbomethoxy-4-nitrodiphenyl, and 2-carbomethoxy-2'-nitrodiphenyl are then formed. During the decomposition of 4-methylphenyl- and 4-chlorophenyldiazonium boron fluorides, the aryls enter all of the three positions of nitrobenzene, the orthoisomer being formed first of all. The following compounds were isolated: 4-methoxy-4'-nitrodiphenyl and 4-methoxy-3'-nitrodiphenyl. The presence of 4-methoxy-2'-nitrodiphenyl, 2'-nitro-, 4'-nitro-, and 3'-nitrochlorodiphenyls was spectrographically proved. During the decomposition of 4-carbomethoxyphenyldiazonium boron fluoride, the main

Card 2/3

S/062/60/000/011/005/016
B013/B078

AUTHORS: Makarova, L. G., Matveyeva, M. K.

TITLE: Decomposition of Aryldiazonium Boron Fluorides in Nitrobenzene and Ethyl Benzoate in the Presence of Free Metal - Copper Powder

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1960, No. 11, pp. 1974 - 1980

TEXT: In this paper, the decomposition of aryldiazonium boron fluorides in nitrobenzene and of phenyldiazonium boron fluoride in ethyl benzoate in the presence of free metal - copper powder - was examined in order to obtain a confirmation for the formation of the aryl radical during the synthesis of organometallic compounds from aryldiazonium boron fluorides. As had been expected, products of a homolytic reaction were formed in nitrobenzene in the presence of a large quantity of copper powder. This occurred during the decomposition of aryldiazonium boron fluorides. The aryl occupies all of the three positions of nitrobenzene, especially, the ortho and para positions. Phenyldiazonium boron fluoride decomposes

Card 1/3

87125

Production of Aromatic Selenium Compounds With Aryl Diazonium Boron Fluorides S/062/60/000/002/016/021
B023/B064

There are 12 references: 2 Soviet, 2 British, 1 French, 8 German, 1 Swedish, and 2 US.

ASSOCIATION: Institut elementoorganicheskikh sovedineniy Akademii nauk SSSR (Institute of Elemental-organic Compounds of the Academy of Sciences USSR)

SUBMITTED: February 17, 1960

Card 2/2

5.3700 1236, 2209, 1273

87125

S/062/60/000/009/013/021
B023/B064

AUTHORS:

Nesmeyanov, A. N., Vinogradova, V. N., and Makarova, L. G.

TITLE:

Production of Aromatic Selenium Compounds With Aryl
Diazonium Boron Fluorides

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh
nauk, 1960, No. 9, pp. 1710-1711

TEXT: The authors report on the synthesis of aromatic selenium compounds with boron fluorides of aryl diazonium. In the introduction, methods of synthesis applied by Western authors (Refs. 2, 3 and 4) are mentioned. By decomposing boron fluorides of aryl diazonium with zinc dust in the presence of selenium tetrachloride, in acetone, diaryl selenides with the following aryls were obtained: phenyl-, para-, and orthotolyl, parachloro phenyl and paramethoxy phenyl. In the case of aryl phenyl a small amount of diaryl diselenide was obtained. The yields were not large. Only in the case of aryl phenyl the yield reached 35-40%. In other cases the yields were smaller. Diaryl selenides were separated by vacuum distillation and with vapor. They were identified by being passed over into bromides.

Card 1/2

Formation of Organomagnesium Compounds
During the Decomposition of Aryldiazonium
Borofluorides With Magnesium

77090
SOV/62-59-12-34/43

There are 2 tables; and 8 references, 6 Soviet,
2 U.S. The U.S. references are: Dunker, M. F.
B., et al., J. Am. Chem. Soc., 58, 2308 (1936); Doak,
G. O., Freedman, L. D., J. Am. Chem. Soc., 73, 5658,
5656 (1951), and 74, 830 (1952).

ASSOCIATION: Institute of the Elementoorganic Compounds of the
Academy of Sciences of the USSR (Institute elemento-
organicheskikh soyedineniy Akademii nauk SSSR)

SUBMITTED: May 5, 1959

Card 3/3

TABLE 1. DECOMPOSITION OF ARYLDIAZONIUM BORO-
FLUORIDES WITH MAGNESIUM FILINGS IN TETRAHYDR FURAN

77090
SOV/62-59-12-34/43

NR	Ar N ₂ BF ₄		AMOUNT		REACTION CONDITIONS	REACTION TIME	OBTAINED ArCOOH	
	Ar	AMOUNT, IN g	Mg, in g	SOLVENT, IN ml			in g	mp
1	<i>o</i> -CH ₃ C ₆ H ₄	50	5	250	STARTING TEMP, -8°. THE TEMP DID NOT RISE. AFTER 1 MONTH, THE REACTION MIXTURE WAS PERIODICALLY HEATED TO 30°	2 MONTHS AND 10 DAYS	>0.01	104
2	<i>p</i> -CH ₃ C ₆ H ₄	50	5.5	250	TEMP, 2°. TEMP DID NOT RISE.	2 MONTHS	>0.01	179
3	<i>p</i> -CH ₃ C ₆ H ₄	50	6	250	STARTING TEMP, -10°; max, -8°	6 DAYS	>0.01	181
4	<i>p</i> -C ₂ H ₅ OC ₆ H ₄	10	0.97	75	STARTING TEMP, -8°; max, 8°	3 DAYS	>0.01	193
5	α -C ₁₀ H ₇	58	5.7	250	STARTING TEMP 22°; max, 32°	2 MONTHS	0.01	159

Card 2/3

5.3700

77090
SOV/62-59-12-34/43

AUTHORS: Nesmeyanov, A. N., Makarova, L. G.

TITLE: Formation of Organomagnesium Compounds During the
Decomposition of Aryldiazonium Borofluorides With
Magnesium

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh
nauk, 1959, Vol 59, Nr 12, pp 2241-2244 (USSR)

ABSTRACT: Decomposition of aryldiazonium borofluorides with
metallic magnesium in tetrahydrofuran, as well as
in other ethers, or in dimethylformamide yields
organomagnesium compounds. The experiments are
summarized in Table 1.

Card 1/3

Decomposition of the Boron Fluoride of Phenyl diazonium in the Esters of the α, β -Unsaturated Acids

SOV/62-59-8-7/42

β -position are formed. To go into greater detail, the β -methylatropic acid forms with ethyl crotonate (after saponification) as well as small amounts of dibasic acids: $C_{14}H_{16}O_4$ or $C_{14}H_{14}O_4$. With methyl acrylate atropic acid, phenyl acrylate, and insignificant quantities of α -methyl- β -phenylglutaric acid form. With methyl methacrylate benzylacrylic acid and further transformation products of phenyl methacrylate are formed; ketophenol-2-methyl-5-oxyindan-1-on. The reactions are described in the experimental part. There are 1 figure and 15 references, 4 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR (Institute of Elemental-organic Compounds of the Academy of Sciences, USSR)

SUBMITTED: December 16, 1957

Card 2/2

5(3)
 AUTHORS: Makarova, L. G., Matveyeva, M. K. SOV/62-59-8-7/42
 TITLE: Decomposition of the Boron Fluoride of Phenylidiazonium
 in the Esters of the α , β -Unsaturated Acids
 PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
 1959, Nr 8, pp 1386-1392 (USSR)

ABSTRACT: It is shown in the present paper that the boron fluoride of
 phenylidiazonium can decompose heterolytically with compounds
 containing a polar carbon - carbon double bond, such as the
 esters of α , β -unsaturated acids, in contrast with the Meer-
 wein-Koelsch reaction. Therefore, the decomposition of boron
 fluoride diazonium was carried out in the esters of acrylic,
 crotonic, and methacrylic acids, which have the following

structure:
$$\begin{array}{c} \text{R} \delta^+ \quad \delta^- \\ \diagdown \quad \diagup \\ \text{C}=\text{C}-\text{O} \\ \diagup \quad \diagdown \\ \text{H} \quad \text{R}' \text{OR}'' \end{array}$$
 . The phenyl cation has an effect

upon the α -carbon so that the esters of the α -arylated un-
 saturated acids or products of a simultaneous addition of
 fluorine or, in the presence of water, hydroxyl in the

Card 1/2

SOV/20-122-3-22/57

The Synthesis of Aromatic Germanium Compounds by Means of Aryl Diazonium
Borofluorides

(Ref 4) in acetone. In contrast to SnCl_4 and PbCl_4 , GeCl_4 forms no double salts with aryl diazonium chlorides. The substances mentioned last in the title were decomposed under the presence of GeCl_4 . Zinc dust proved to be the best reducing metal, acetone the best solvent. Monoarylated germanium compounds are formed as the result of the reaction. Under these conditions germanium does not form compounds of higher degrees of arylation. The aryl trichloro germanium varieties were isolated and analyzed as anhydrides of the aryl germanic acids. The latter form non-melting colorless powders. Anhydrides of the aryl germanic acids with $\text{Ar}=\text{C}_6\text{H}_5$, $p\text{-CH}_3\text{OC}_6\text{H}_4$ -, $p\text{-C}_2\text{H}_5\text{OC}_6\text{H}_4$ -, $p\text{-BrC}_6\text{H}_4$ -, $p\text{-ClC}_6\text{H}_4$ - were produced. The anhydride of the phenyl germanic acid was obtained with a yield of 28% of the theoretically possible yield; the yields of other anhydrides were smaller. In a kind of experimental part (not denoted as such) the other data are given. There are 1 table and 4 references, 4 of which are Soviet.

SUBMITTED: June 11, 1958

Card 2/3

SOV/20-122-3-22/57

AUTHORS: Nesmeyanov, A. N., Member, Academy of Sciences, USSR,
Yemel'yanova, L. I., Makarova, L. G.

TITLE: The Synthesis of Aromatic Germanium Compounds by Means of Aryl
Diazonium Borofluorides (Sintez aromaticheskikh soyedineniy
germaniya posredstvom arildiazoniyboroftoridov)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 3, pp 403-404
(USSR)

ABSTRACT: The aromatic tin and lead compounds were produced by the first
author and his collaborators (Ref 1). In the case of tin mainly
diarylated derivatives were formed. In the case of the decompo-
sition of double salts of tin chloride and of the aryl diazonium
chlorides by metallic tin powder the best, however, not high
yields (23%) were obtained if $\text{Ar}=\text{C}_6\text{H}_5$. Higher yields of diaryl
dichloro stannates (up to 40%) were obtained in the case of the
decomposition of the substances mentioned last in the title by
zinc dust under the presence of tin chloride in acetone. For
organolead compounds the decomposition of the substances
mentioned last in the title by metallic lead powder furnishes
the best results, (Ref 3) the same holds for a lead-sodium alloy

Card 1/3

SOV/62-58-12-8/22

Decomposition of Aryl-Diazonium Boron Fluorides in Nitrobenzene

the interaction of the electron cloud of the chlorine atom with the positive charge of the nitrogen atom of the nitro group. There are 6 figures and 23 references, 2 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR
(Institute of Elementorganic Compounds, Academy of Sciences, USSR)

SUBMITTED: March 16, 1957

Card 3/3

Decomposition of Aryl-Diazonium Boron Fluorides in Nitrobenzene SOV/62-58-12-8/22

separated. The optical analysis of these mixtures by ultraviolet spectroscopy likewise proves the presence of meta-isomers only. Absorption curves of the investigated substances were obtained by the spectrophotometer SF-4, a construction by V. I. Dianov-Klokov. The authors thank I. V. Obreimov and I. Kachkurova for their optical measurements. The entrance of aryl from the aryl-diazonium boron fluorides into the nitrobenzene in the meta-position proves the electrophilic, cationic nature of this aryl and a heterolytic character of the decomposition of the diazonium salt. Only in the last two cases the aryl unexpectedly entered the ortho-position of nitrobenzene. Only 2 diphenyl derivatives were separated: 2,2-dinitro-diphenyl and 2-chloro-2' nitrodiphenyl. In the first case a possible crosswise conjugation of the two nitro groups with both benzene nuclei and besides that a coplanarity of two benzene nuclei in such a substituted diphenyl may be regarded as the cause of that formation. In the second case there is also a possible conjugation of chlorine atom electrons with the electron system of 2-nitro-diphenyl and a coplanarity of such a molecule. In this case also the possible presence of a certain ortho-effect must be considered. It is expressed by

Card 2/3

5(3)

AUTHORS:

Makarova, L. G., Matveyeva, M. K., Gribchenko, Ye. A. SOV/62-58-12-8/22

TITLE:

Decomposition of Aryl-Diazonium Boron Fluorides in Nitrobenzene
(Razlozheniye borofloridov arildiazoniye v nitrobenzole)

PERIODICAL:

Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk,
1958, Nr 12, pp 1452-1460 (USSR)

ABSTRACT:

In the present paper the authors investigated the decomposition of aryl-diazonium boron fluorides in nitro-benzene with aryl-phenyl, paratolyl, parachloro phenyl, paramethoxy phenyl, orthocarbomethoxy phenyl, paracarbomethoxy phenyl, orthonitro phenyl, and orthochloro phenyl. Besides a direct precipitation of reaction products by means of distillation and crystallization, the relation between the substitution products of the benzene nucleus - ortho-, meta- and para-isomers - possibly forming in the reaction mixture, were determined by optical analysis. In the first six cases the aryl formed in the decomposition of aryl diazonium boron fluorides in nitro-benzene entered the nitro-benzene nucleus only in a meta-position to the nitro group. Of the 3 possible isomers (ortho-, meta-, para-) only one, the corresponding metanitro-biaryl, was

Card 1/3

Decomposition of Aryl Diazonium Boron Fluorides in
Esters of Benzoic Acid

SOV/62-58-6-6/37

proves the cationic nature of this aryl and the heterolytic character of the decay of aryldiazonium borofluoride. There are 1 table and 11 references, 1 of which is Soviet.

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR
(Institute of Elemental-organic Compounds AS USSR)

SUBMITTED: December 19, 1956

1. Boron fluorides---Decomposition 2. Benzoic acid esters---Chemical reactions

AUTHORS: Makarova, L. G., Gribchenko, Ye. A. SOV/62-58-6-6/37

TITLE: Decomposition of Aryl Diazonium Boron Fluorides in Esters of Benzoic Acid (Razlozheniye borftoridov arildiazoniye v efirakh benzoynoy kisloty)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1958, Nr 6, pp. 693 - 697 (USSR)

ABSTRACT: In earlier works it was shown (Ref 1) that phenyl enters into meta-position in the benzene ring with the nitro-carbethoxy- and trialkyl ammonium groups. This proves the cationic nature of this phenyl and the heterolytic character of the diazonium salt. In the course of the present work the authors prove that the phenyl formed by the decomposition of phenyldiazonium-borofluoride enters into metaposition in the carboxyl group of benzoic acid esters. Benzoic acid ester together with benzoic acid-isopropylester produces $C_6H_5COOC_{15}H_{24}$. Transesterification is the only result of the action of aryls of borofluorides, p-bromine- and p-nitro-phenyldiazonia upon ethylbenzoates. The fact that aryl of the borofluoride of aryldiazonium enters into metaposition with respect to the carbalcoyl group of the esters of benzoic acid

Card 1/2

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the Ester of Benzenesulpho-Acids and in Acetophenone

benzenesulphoacid). This phenyl thus acted exclusively on the sulphalkoxylgroup. A mixture of the m- and p-phenylacetophenones (relation 4:1) is formed in acetophenone with the decomposition of boron-fluoride of phenyldiazonium. These reactions prove the heterolytic character of the decay of phenyldiazonium-boron fluoride. There are 11 references, 3 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR
(Institute for Elemental-organic Compounds AS USSR)

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1. Phenyldiazonium boron fluoride--Decomposition 2. Benzenesulpho
acid esters--Applications 3. Acetophenone--Applications

Card 2/2

AUTHORS: Makarova, L. G., Matveyeva, M. K. 62-58-5-6/27

TITLE: Decomposition of Phenyldiazonium-Boron Fluoride in the Ester of Benzenesulpho-Acids and in Acetophenone (Razlozheniye borftorida fenildiazoniya v efirakh benzolsul'fokisloty i v atsetofenone)

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ABSTRACT: The authors continued their investigations for the purpose of proving the cationic nature of phenyl (References 1,2). It was assumed with the dissociation of phenyl-diaconium-boron fluoride that the entering of phenyl into the meta-position with respect to the meta-"orientates" proves the cationic nature of phenyl. With the decomposition of this compound, the products of the entering of phenyl into the benzene-ring of the methyl- and ethyl-ester of benzenesulphoacid could not be obtained. The action of phenyl was directed to the sulphalk-oxyl-group. Phenylester of benzenesulphoacid proved to be the sole determinable reaction-product in both cases. The yield amounted to 40% in the case of ethylester, to 35% in the case of methylester (of

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